AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (cancelled)

2. (currently amended) The system of claim [[1]] 21 further comprising:

a humidifier; and

a controller connected to said compensator and said humidifier for increasing said relative humidity of said gas stream based on said compensated relative humidity signal.

3. (currently amended) ~~The system of claim 1~~ A system for sensing the relative humidity of a fuel cell, comprising:

a humidity sensor that senses the relative humidity of a gas stream supplied to an electrode of said fuel cell and that generates a relative humidity signal;

a first sensor that senses at least one of pressure and temperature of said gas stream and generates at least one of a temperature signal and a pressure signal; and

a compensator that is connected to said humidity sensor and said first sensor and that generates a compensated relative humidity signal based on said

relative humidity signal and said at least one of said temperature signal and said pressure signal; and

wherein said gas stream is provided by one of a reformate source and a hydrogen source to said electrode which is an anode of said fuel cell.

4. (currently amended) The system of claim [[1]] 7 wherein said gas stream is provided by one of an air source and an oxygen source to said electrode which is a cathode of said fuel cell.

5. (currently amended) The system of claim [[1]] 21 wherein said compensator includes memory containing look-up tables.

6. (currently amended) The system of claim [[1]] 21 wherein said compensator employs mathematical formulas to determine said compensated relative humidity signal.

7. (currently amended) ~~The system of claim 1 further comprising:~~ A system for sensing the relative humidity of a fuel cell, comprising:

a humidity sensor that senses the relative humidity of a gas stream supplied to an electrode of said fuel cell and that generates a relative humidity signal;

a first sensor that senses at least one of pressure and temperature of said gas stream and generates at least one of a temperature signal and a pressure signal; and

a compensator that is connected to said humidity sensor and said first sensor and that generates a compensated relative humidity signal based on said relative humidity signal and said at least one of said temperature signal and said pressure signal; and

a gas composition sensor for sensing a concentration of a first gas in said gas stream and for generating a first gas concentration signal.

8. (original) The system of claim 7 wherein said compensator is connected to said gas composition sensor and wherein said compensated relative humidity signal is based on said relative humidity signal, said at least one of said temperature and said pressure signal, and said first gas composition signal.

9. (original) The system of claim 7 wherein said first gas is one of nitrogen, carbon monoxide, and carbon dioxide.

10. (original) A system for sensing the relative humidity of a fuel cell, comprising:

a humidity sensor that senses the relative humidity of a gas stream and generates a humidity signal;

a gas composition sensor for sensing a concentration of a first gas in said gas stream and for generating a first gas composition signal; and

a compensator that is connected to said humidity sensor and said temperature sensor and that generates a compensated relative humidity signal based on said relative humidity signal and said first gas composition signal.

11. (original) The system of claim 10 further comprising:

a pressure sensor that generates a pressure signal that is based on a pressure of said gas stream.

12. (original) The system of claim 11 wherein said compensator is connected to said pressure sensor and wherein said compensated relative humidity signal is based on said relative humidity signal, said first gas compensation signal and said pressure signal.

13. (original) The system of claim 10 further comprising:

a humidifier; and

a controller connected to said compensation circuit and said humidifier for increasing said relative humidity of said gas stream based on said compensated relative humidity signal.

14. (original) The system of claim 10 wherein said gas stream is provided by one of a reformate source and a hydrogen source to an anode of said fuel cell.

15. (original) The system of claim 10 wherein said gas stream is provided by one of an air source and an oxygen source to a cathode of said fuel cell.

16. (original) The system of claim 10 wherein said compensator includes memory containing look-up tables that are used to generate said compensated relative humidity signal.

17. (original) The system of claim 10 wherein said compensator employs mathematical formulas that are used to generate said compensated relative humidity signal.

18. (original) The system of claim 10 further comprising:

a temperature sensor that senses a temperature of said gas stream and generates a temperature signal.

19. (original) The system of claim 18 wherein said compensator is connected to said temperature sensor and wherein said compensated relative humidity signal is based on said relative humidity signal, said first gas compensation signal and said temperature signal.

20. (original) The system of claim 10 wherein said first gas is one of nitrogen, carbon monoxide, and carbon dioxide.

21. (previously presented) A system for sensing the relative humidity of a fuel cell, comprising:

a humidity sensor that senses the relative humidity of a hydrogen-containing gas stream and generates a relative humidity signal;

a first sensor that senses at least one of pressure and temperature of said gas stream and generates at least one of a temperature signal and a pressure signal; and

a compensator that is connected to said humidity sensor and said first sensor and that generates a compensated relative humidity signal based on said relative humidity signal and said at least one of said temperature signal and said pressure signal.